

## A B S T R A C T

## A BANDPASS FILTER WITH CARRIER FREQUENCY REDUCTION

5       The invention provides a bandpass filtering method  
in which two frequency transpositions are performed in  
parallel on an input signal (SE) for filtering using  
respective first and second upstream mixing signals (SM1,  
SM2) that are substantially in phase quadrature so as to  
10 obtain respective first and second transposed signals  
(ST1, ST2), and the two transposed signals are filtered  
respectively by two lowpass filters (F1, F2), the  
frequency of the transposition signals ( $\omega_0$ ) and the  
passband (B/2) of the low-pass filters being related to  
15 the frequency of the input signal ( $\omega_e$ ) and to the  
passband desired for the bandpass filter, then respective  
frequency transpositions are performed on the first and  
second filtered transposed signals (STF1, STF2) using two  
respective downstream mixing signals, and the sum or the  
20 difference of the two signals obtained in this way is  
taken, the frequency of the output mixing signals (SMV1,  
SMV2) is selected to be different from the frequency of  
the first and second mixing signals so that the output  
signal is transposed into a desired frequency range, the  
25 method being characterized in that a common oscillator  
(LO) is used which is coupled with a first phase shifter  
(MTM) to produce the upstream mixing signals and which is  
coupled with a second phase shifter (MTV) to produce the  
downstream mixing signals, and in that the phase shifters  
30 are used in opposite manner on the first and second  
signals so that each of said first and second signals  
(VT1, VT2) receives the phase-advanced output signal from  
one of the two phase shifters and the phase-delayed  
output signal from the other of the two phase shifters.

35

Translation of the title and the abstract as they were when originally filed by the Applicant. No account has been taken of any changes that may have been made subsequently by the PCT Authorities acting ex officio, e.g. under PCT Rules 37.2, 38.2, and/or 48.3.

09980027.022702